

near Yankton, subsequently moved east-southeastward into northern Illinois, and was central a little to the south of Grand Haven on the morning of the 14th. During that day, increasing winds and light rains prevailed over the Lake region, while the storm-centre moved eastward between Buffalo and Kingston, and was, on the morning of the 15th, central near Lake Champlain, whence it moved northeastward beyond our stations, and was followed by the remarkable area of cold air and high barometer No. V.

Nos. VIII and IX. On the 14th, an area of cold air, with dry, clear weather, began moving southward over the Lake region, and its influence prevailed over the entire country east of the Rocky Mountains until the 19th, during which interval southerly winds, occasionally increasing to gales, prevailed from Kansas to Manitoba, with cloudy weather, and, on the 17th and 18th, light rains. Northerly winds, gradually diminishing in force and shifting to southeast, prevailed east of the Mississippi. Local depressions appeared on the 19th, in New England, and a general fall of pressure occurred over the Lake region, probably in connection with a central low barometer, between Lake Huron and Hudson's Bay, on the morning of the 20th, which depression may be considered central in northern New England on the afternoon of the 20th, at which time, also, a slight depression existed in Iowa. The latter, which is marked as area No. IX, continued nearly stationary until the afternoon of the 21st, a tornado being reported in Indian Territory on the 20th, while the area of cloudy weather and light rain extended slowly to Arkansas, the Ohio valley and New York. The depression itself seems to have moved eastward into Michigan, where it disappeared at midnight, and a general area of cloud and rain extended eastward over the Middle and Eastern States.

No. X. From the 21st to the 24th, no well-marked depression is presented, except the continued formation and disappearance of slight depressions and numerous light rains. On that day areas of low barometer existed in the South Atlantic States and the Upper Lake region, but did not develop further. The steady diminution, of pressure in the extreme Northwest and probably in British America, seems to have exceeded its normal rate, and finally to have culminated in the formation, on the 26th, of an area of low barometer in Nebraska and Dakota, and increasing northerly winds continued, with light rains during the 27th, from Nebraska to Manitoba. The central lowest pressure moved from Iowa northeastward over Lake Superior on the 28th, and thence southeastward to Lake Ontario on the morning of the 29th, accompanied by very general rains over the Lake region. During the 29th colder, northerly winds and rain, followed by clear weather, prevailed over the Lower Lakes, while the storm-centre turned again northeastward down the St. Lawrence valley.

No. XI. May be approximately located in western Dakota in the afternoon of the 29th, and in western Minnesota on the afternoon of the 30th, but apparently oscillated about in this region until midnight of the 31st. It was near St. Paul on the morning of June 1st, and its subsequent history belongs to that month. During the nights of the 31st of May and 1st of June, unusually heavy rain-storms prevailed in western Iowa and southern Minnesota.

TEMPERATURE OF THE AIR.

The average temperature of the air is shown by the isotherms on Map No. II, and by the table in the lower left-hand corner, from which it will be seen that the general average for the whole country is about 0.5° below its normal value, the greatest depression being in the St. Lawrence valley, and the greatest excess in the Lower Lake region.

Frosts.—The frosts have during the month been especially destructive in Ohio and Illinois, and others are reported in Minnesota on the 17th; Connecticut, 18th; Delaware, 18th; Illinois 16th and 18th; Indiana, 17th; New Jersey, 18th; New York 18th and 31st; Virginia 19th and 31st.

PRECIPITATION.

The general distribution of rain-fall is shown by the isohyetal on Chart No. III, from which it will be seen that the rain-fall is, on a general average, about 0.6 inches below its normal value. The largest deficiencies occur in the Gulf and Middle Atlantic States, where the rain-fall is less than one-half its usual amount. A slight excess of rain, amounting to one-quarter of its average amount, is reported from the upper Mississippi valley, the Lake region and South Atlantic coast, and a still larger excess from the St. Lawrence valley.

Cloudy days.—The cloudiness during the month has been decidedly below the average. It has been greatest in New England, where the average is from 7 to 11 cloudy days during the month; an average of 7 days is reported from New York, the Lake region and Minnesota, whence, as we proceed southward, the amount of cloud diminishes to an average of 1 or 2 days in the Gulf and South Atlantic States.

Rainy days have been, as usual, far more numerous than cloudy days, the average number being 15 over the Lower Lakes, New York and New England; 17 in Kansas and Indian Territory; 10 on the South Atlantic coast and in Tennessee, Kentucky, Missouri and Illinois.

RELATIVE HUMIDITY.

The relative humidity averages 70 per cent. along the Atlantic coast stations; 50 per cent. at stations in the neighborhood of the Appalachian ranges; 60 per cent. from the Lower Lake region to Missouri, and between 55 and 65 per cent. northward of this region.

WINDS.

The prevailing wind has been southeast to southwest throughout the Gulf States and Atlantic coast stations. It has been southeast in Kansas, Iowa and Minnesota, and west in the Lower Lake region.

Total movement of the air.—The largest total movements of the air are—at Pike's Peak, 14,808; Cape Hatteras, 11,377; Sandy Hook, 9,945; Cheyenne, 9,780; Peck's Beach, 9,500; Long Branch, 9,466; Erie, 8,969; San Francisco, 8,785; Indianola, 8,699; Cape Henry, 8,510. The lowest at: Portland, Or., 3,042; Lynchburg, 3,122; Augusta, 3,261; Montgomery, 3,802; Wytheville, 3,809; Shreveport, 3,853; Vicksburg, 3,866; Nashville, 3,894; San Diego, 3,978.

VERIFICATIONS.

The detailed critical comparison of the published Probabilities with the weather of the succeeding 24 hours shows, on the average, for the whole country, that 91.4 per cent. of the predictions have been verified.